

The Daimler-Benz Research Centre in India: An Overview

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ABSTRACT

Internationalization of industries brings new dimension to the way the companies do business in future and some companies, although most of them have been using this only on cost or political grounds, have really analyzed the parameters that would benefit such an endeavor. Taking the Daimler-Benz Research Centre India as an example, the present paper analyzes various factors that have been considered by Daimler-Benz AG, Germany, in setting up the third research center outside of Germany. The paper generalizes some of the considerations, as far as possible, so as to make the contents of the paper more applicable to larger context.

1. THE FACTORS THAT LEAD TO INTERNATIONALIZATION OF INDUSTRY RESEARCH

As more and more manufacturing companies setting up production units abroad, trying to react to the local, society specific needs, there comes a peculiar situation for the research and development units which traditionally have been serving to their production units that existed next door. The customer, in this case the production, is not anymore in the neighborhood! Customer is out in some other country which has altogether a different cost structure and product character. This situation can be summarized by saying that decentralized production and centralized research is not a model that works anymore. Decentralized production forces decentralized research. It is not always easy to develop technologies and products without understanding the culture-specific inclinations and interests, a factor that many companies even today have neglected to look at.

"If your family jumps in to the train and drives off, you have to go along, otherwise you loose the family"

As long as cost differences exist between countries (e.g., developed and developing), sister companies in low-income countries can not afford research to be carried out in the country of the parent concern. Consider, for example, a German manufacturing company setting up an unit in a south-east Asian country and the research divisions located in Germany working for the future product development meant for the Asian country. The difference in the research costs, mainly originate because of the living standards, do not allow the future products to be price effective when the research is done in the country of the parent concern.

Added to the above two factors, is the advantage such an effort offers is the culture dependent inclinations or expertise that could be well tapped for the interests of a particular concern. It is a known fact that mathematical oriented work in India is more respected and more welcome than elsewhere, because the society thinks that solving a complex mathematical equation indicates an individual's intellectual abilities. For the same reason, mathematics is also taught right from the basic schools. This has enabled India to produce some of the best mathematicians in the world. Similar examples of culture dependent inclinations can be said of other Asian societies like China and others.

Although cost factor happens to be one of the main reasons for the globalization of the manufacturing industry until now, more and more future oriented companies realize that there are also other long term benefits of having presence in foreign countries. They slowly come to realize that globalization does not mean getting cheap work done abroad. Internationalization means having a real presence in the society where one wants to sell. This statement can be substantiated by looking at the recent developments in various countries where the focus is being more on self-sufficiency and indigenously developed products. The trend seems to be more on having the products developed within the country rather than importing the manufactured goods from abroad. But the difference in the level of technology available within the country to

what a developed nation can offer forces these developing societies to look for partners rather than allowing them to just sell the goods produced "elsewhere". The trick here seems to be setting up companies in countries and allowing them to acquire such a local character that they become an integral part of the particular society where the company has its presence.

2. RATIONALE BEHIND THE INTERNATIONALIZATION OF A CONCERN'S RESEARCH UNIT

Based on the above discussion, one can derive the parameters that drive a concern to become global or international:

- Improved knowledge and technology transfer between the research and development: Geographical and cultural proximity allow the research to react faster to the production and development needs.
- Access to new knowledge and technologies: Not every country has a silicon valley and it is also not feasible to build one silicon valley today within one's own country for reasons that lie in history, the political developments of the country and so on. But to have a presence in the silicon valley is well within the reach that allows a company to be a part of the technological developments that take place there for the know-how to be transferred to the parent company.
- Representing the political interests of a company and preparing the society for the company's products: The variety of governments and their ideologies can be so different in their character and policies that it is not always possible to take the right decisions without having the presence in the country of interest. The other parameter that plays an important role here is that a particular society is probably not yet ready for a product that is very common in another society and the company in question might be the world leader in these products. Companies make their products known to societies that do not use them and this is possible by initially having a small presence that takes up the task of making its parent company's products known. This is known as building up new markets.
- Utilizing the socio-cultural expertise and abilities for the improvement of its own weaknesses or missing competences.
- Cost factors: Companies that sell products to a variety of societies with a variety of living standards have to adapt their products that fit to the purchasing power capacity of the customer in countries of the above mentioned categories.

3. SIX INSTRUMENTS OF INTERNATIONALIZATION

Once the rationale behind the internationalization is clear, the company has about six instruments at its disposal to go ahead with the internationalization process:

1. Setup of technology monitoring offices
2. Recruiting foreign nationals as employees and exchange of people to and from other countries for short or long-term assignments
3. Project based international research cooperation or collaboration
4. Setup of Joint-Ventures with foreign partners
5. Appointing renowned people from foreign countries as research consultants, and
6. Setup of 100% subsidiary companies abroad

Daimler-Benz's research and technology cell, following the footsteps of production units, has started reacting to the call of internationalization, the result of which was the setting up of the first research center outside of Germany at Palo Alto, in the heart of Silicon Valley about four years ago. The second center in the process of internationalization of research was a joint venture in Shanghai, China, in packaging technologies. The third in the chain is the Daimler-Benz Research Centre India (DBRCI).

4. THE DAIMLER-BENZ RESEARCH CENTER INDIA

Born approximately a year ago, the DBRCI is a 100% subsidiary of the Daimler-Benz AG (DBAG), Germany, registered under the so called Software Technology Parks program. Started with 7 people in November, 1996 DBRCI has grown fourfold in the last 12 months. For technology driven companies like DBAG internationalization is an essential strategy for increased access to know-how. Everywhere in the world, some organizations more than others set their corporate mission and strategies in tune with their

long-term visions. That's what makes them unique – and in most cases, market leaders. In Daimler-Benz, a technology driven company, research is perceived as the cornerstone on which the future success of the organization is based. In recognition of the pivotal significance of research activities, the Research and Technology (RT) unit at Daimler-Benz has been allotted a central role in the company. In tune with the group's emphasis on innovation and product and service excellence as its commitment to its customers, RT has embarked up on internationalization process that resulted in its presence in various "technology hot spots" over the last 4 years. Fast and efficient response to needs of the global markets of today means conducting research where the markets are located. At Daimler-Benz, the strategy is to closely follow the technological developments in various countries and identify research interests of DBAG that can be served by the talent available in the host country. Under these considerations, India has been identified as a "hot spot" for information technology research and consequently the center has been set up.

5. FIELDS OF COMPETENCE AT THE CENTER

The main focus at the center is to do research and advanced development work for the DBAG group, for important suppliers and for limited third party companies in the area of IT-based electronic sciences which can be described under following topics:

- Analog and digital electronics for transportation systems
- Technology specific simulations (e.g., physical processes)
- Passive sensing
- Security mechanisms (encryption, cryptography, digital signatures, etc.,)
- RF technologies (e.g., electromagnetic interference)
- Avionics and space (safety and mission critical) related software development
- Payload technologies (mainly feasibility studies)

6. STRATEGIC POSITIONING OF DBRCI IN THE RESEARCH AND DEVELOPMENT WORLD OF DBAG

- To be of assistance to the R&D activities of all the business units of DBAG specifically positioned to their prototype and next generation product development needs and at the same time to be a partner to the central research divisions of Research and Technology (RT)
- Closing the know-how circle between DBAG and its suppliers by participating in the R&D activities of selected suppliers.
- Building up a strong base of know-how in boundary technologies of DBAG with selected external organizations and companies
- In-house research programs making use of the local culture-specific expertise where DBRCI interacts with renowned universities and organizations in India

All this strategy is also meant to serve the needs of the business units and sister companies of DBAG in the Asian region and also, to some extent, in other low-income countries. In addition to its role as part of the global research network of DBAG, the Indian center will also act as a bridgehead for the Indian scientific community comprising of the nation's reputed universities, information technology industry and research establishments.

7. TYPE OF RESEARCH AND DEVELOPMENT PROJECTS AT DBRCI

1. Innovation projects directly from the Daimler-Benz holding
2. Projects from the research committees such as Mercedes-Benz Research Committee, Daimler-Benz Aerospace Research Committee, etc.
3. Direct projects from the Business Units and selected suppliers
4. Projects funded by international organizations, ministry of education and research, etc.
5. In-house projects

DBRCI mainly works on the research problems of either the prototype divisions or next generation product divisions necessitating in building up a very specialized group but highly flexible at the same time. So the

composition of the scientists has to have multi-disciplinary nature. Most of the scientists working at DBRCI, hence, have a basic degree in engineering with either a Masters or a doctorate degree in computer sciences.

Innovation projects are the projects that are suggested by individual divisions and centers every once a year which go through various levels filtering until it goes all the way up to the board of management for the acceptance and finances. These normally are product ideas that might become reality in the next 7 to 10 years. Research committee projects are normally the projects decided by the business units, generally very large in nature in terms of complexity and duration. The topics are made known to the divisions through internal communication channels inviting the competent groups for presentations which point out their individual contribution potential. These projects, being very futuristic in their nature, require many research divisions to participate in the program and after a series of presentations from the competitors, a group of divisions is identified to carry out the projects. Direct assignments from the business units are the projects that come from the DBRCI managers' direct marketing with the prototype divisions. In-house projects are the topics that are usually carried out by students and doctoral researchers meant to acquire know-how in certain technologies that might become important to the concern in future.

8. BOARD OF DIRECTORS

To represent the DBAG and its business units in an even manner, DBRCI has a set of Board of Directors (BoDs) drawn from the major business units. DBRCI presently has 5 directors in the board each representing a key business unit or the FT. DBRCI profits from the suggestions given by the board and the board shapes the future direction of the center based closely on the concern's future strategies. The present directors represent the automobile sector (Mercedes-Benz), the aero-space units (Daimler-Benz Aerospace), the information technology service sector (Daimler-Benz Interservices) and the RT. The BoDs have the responsibility to make the presence of DBRCI known in their divisions and get project assignments.

9. DBRCI AS A BRIDGE BETWEEN DAIMLER-BENZ AND THE INDIAN SCIENTIFIC COMMUNITY

Apart from the regular research work for Daimler-Benz research and technology departments and the business units, DBRCI is also involved in promoting contacts with the local research community in India. Under this scheme, DBRCI undertakes many programs, like offering masters' degree students from reputed Indian universities to perform their theses, announcing doctoral fellowships for state-of-the-art technology based topics, etc. Apart from the above two programs, the employees of DBRCI are also encouraged to pursue higher studies registering at reputed universities as external doctoral candidates. For tasks that do not fall under the core competences of DBRCI, projects are outsourced to competent local companies or organizations.

10. GENERAL LITERATURE

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